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| EXAMINER |
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GEMMELL, ELIZABETH M

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| ART UNIT | PAPER NUMBER |
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2882

DATE MAILED: 02/18/2003

Please find below and or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/834,744

Applicant(s)

BEHIN ET AL.

Examiner

Beth Gemmell

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 12 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-8,10,12-14,21,22 and 24-26 is/are rejected.
- 7) ☒ Claim(s) 2-5,9,11,15-20 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1 ☒ Certified copies of the priority documents have been received.
- 2 ☐ Certified copies of the priority documents have been received in Application No. _____.
- 3 ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9 and 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of the response filled 12 August 2002.

The indication of allowability of claims 1-24 from previous Office Action (paper number 8) is withdrawn in view of recognition that Wood et al. (US Patent 6,396,975) teaches the subject matter of claims 1-24. Any inconvenience is regretted. Rejections based on the newly cited reference follow.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5,13,14, and 26 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 26,27, and 32-37 of copending Application No. 09/932,433. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the elements are contained in the co-pending application in an alternative language.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Objections

Claims 7 and 14 are objected to because of the following informalities:

- Claim 7, line 1: "claim 7"; should be --claim 6--.

Claim 14 recites the limitation "one or more flexures" in line 2. There is insufficient antecedent basis for this limitation in the claim. However, claim 6 does include one or more flexures and claim 14 will be examined as being dependent on claim 6 rather than claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,6,7,8,10,12,14,21,22, 24, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Wood et al. (US Patent 6,396,975).

Re claim 1: Wood et al. discloses, in figure 4b and throughout the disclosure, a microelectromechanical apparatus comprising: a base (12), a flap having a portion coupled to the base so that the flap is movable out of the plane of the base from a first angular orientation to a second angular orientation (14), wherein the base has an opening that receives the flap when the flap is in the second angular orientation (30), the opening having one or more sidewalls, wherein at least one of the sidewalls contacts a portion of the flap such that the flap assumes an orientation substantially parallel to that of the sidewall when the flap is in the second angular orientation, and a sidewall electrode disposed in one or more of the sidewalls (34, column 5, lines 12+).

Re claim 6: Wood et al. discloses, in figure 4b and throughout the disclosure, the flap connected to the base by one or more flexures (32).

Re claim 7: Wood et al. discloses, in figure 4b and throughout the disclosure, at least one flexure being electrically conductive (34).

Re claim 8: Wood et al. discloses, in figure 4b and throughout the disclosure, a light-deflecting element disposed on the flap (18).

Re claim 10: Wood et al. discloses a voltage source coupled between the flap and the sidewall electrode to apply an electrostatic force between the sidewall electrode and the flap (columns 7-8, lines 66+)

Re claim 12: Wood et al. discloses, in figure 4b and throughout the disclosure, an electrode disposed on the base (34), and a voltage source coupled between the electrode in the base and the flap to apply an electrostatic force between the electrode in the base and the flap (columns 7-8, lines 66+).

Re claim 14: Wood et al. discloses, in figure 4b and throughout the disclosure, one or more flexures include one or more torsional beams (25).

Re claims 21,22,24: Wood et al. discloses an array of one or more structures, wherein the array forms an optical switch (column 3, lines 57+).

Re claim 26: Wood et al. discloses applying a fixed force to the flap to move the flap at least partially out of contact with an underlying base (column 9, lines 11+).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al.

Wood et al. discloses the use of silicon for the substrate (column 6, lines 8+), however it fails to disclose the use of a silicon-on-insulator wafer.

One of ordinary skill in the art at the time the invention was made would have recognized the art wide use of a SOI wafer in a MEMS device and it would have been obvious to use a SOI wafer because it improves the reliability of the switch while reducing the cost of manufacture.

Claims 25 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Jin et al. (U.S. Patent 6,256,430).

Jin et al. discloses a flap (fig. 1, 10), movable between two different positions (column 1, lines 45+), having magnetic material disposed on the flap (fig 1, 11) and a forced applied to the flap (column 2, lines 42+).

Jin et al. fails to disclose the magnetic material having a stepped pattern and that the applied force on the flap reduces friction.

One skilled in the art at the time the invention was made would recognize that the shape of the magnetic material would have no impact on the functionality of the material. Therefore, it would be obvious to use a magnetic material with a stepped pattern because it would merely constitute a functionality equivalent substitution of a comparable material.

Response to Arguments

Applicant's arguments with respect to claim 25, filed 12 August 2002 have been fully considered but they are not persuasive. The disclosure does suggest the use of magnetic material having a stepped portion. However it does not suggest any criticality to the invention because it is disclosed as "a stepped magnetic material *may (emphasis added)* be used with any movable flap" which does not state that it is the only way to increase the amount of torque applied. Therefore the disclosure lacks the necessary support of criticality of the invention.

Applicant's arguments with respect to claim 26 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 2-5,9,11,15-20, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The best prior art of record teaches a conventional MEMS switch, however they fail to teach or fairly suggest a magnetically active element on the flap and a sidewall electrode electrically isolated from the base.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beth Gemmell whose telephone number is (703) 305-1937. The examiner can normally be reached on Monday-Thursday 6:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

emg
February 11, 2003

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